

Altimeter-based global observations of **baroclinic inertia-gravity** waves

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Based on Topex data for the North Atlantic and for several selected regions in other parts of the World Ocean, we investigate the component of the sea surface height (SSH) variability associated with **baroclinic inertia-gravity (IG)** waves. The fact that the characteristic period of these waves is shorter than 1 day allows us to filter lower-frequency components out of the total SSH signal and derive wavenumber spectra and spatial **autocovariance** functions which are not affected by ocean eddies, Rossby waves and other slow motions. The resultant spectra of "pure" **IG** waves are then employed to estimate the characteristic amplitude and other properties of **IG** waves. Using a theoretical model of the **IG** wave spectrum, we also estimate (indirectly) the internal Rossby radius of deformation and the degree of nonlinearity of the **IG** waves (as described in the related paper in this session PS-08). Geographic distribution of all these quantities is presented and discussed. We show, in particular, that the **IG-wave** contribution to the total SSH variance attains 15 cm squared.

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